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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/539,878	06/15/2005	Toshiharu Yanagida	09792909-6041	6321

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EXAMINER
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TYNAN, MATTHEW

ART UNIT	PAPER NUMBER
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2871

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/05/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/539,878

Applicant(s)

YANAGIDA, TOSHIHARU

Examiner

Matthew Tynan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/15/2005</u> .   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Information Disclosure Statement***

2. The information disclosure statement (IDS) submitted on 6/15/2005 was filed after the mailing date of the instant application on 6/15/2005. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

### ***Claim Objections***

3. Claims 3 and 9 are objected to because of the following informalities:
4. In claim 3, line 3, "said opposed surfaces" lacks antecedent basis. The examiner suggests correcting line 3 to read "on opposed surfaces of said opposed".
5. In claim 9, lines 2-3, the examiner suggests altering "any of said light control device according to claims 1 to 5" to read "the light control device of any of claims 1 to 5" for the sake of clarity. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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7. Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Kubota et al.

(U.S. Patent No. 6,128,056).

8. Regarding claim 1, Kubota et al. discloses a liquid crystal element sealed between opposed substrates (102, 103; Fig. 2) wherein said liquid crystal is a polymer network liquid crystal, and a gap between said opposed substrates is 4-11 microns (specifically 10 microns; col. 21, lines 54-55).

9. Regarding claim 2, Kubota et al. discloses said gap is 6-10 microns (col. 21, lines 54-55).

10. Regarding claim 3, Kubota et al. discloses optically transparent electrodes (105, 107) provided on opposed surfaces of said opposed substrates (102, 103).

***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 4-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kubota et al. (U.S. Patent No. 6,128,056) in view of Hosoyamada (U.S. Patent No. 6,414,740).

13. Kubota et al. has been discussed above regarding claim 1. Regarding claim 4, Kubota et al. does not teach a temperature detecting section or a pulse control section.

14. However, Hosoyamada discloses:

- A temperature detecting section (3,4, Fig. 2) which detects the environmental temperature of the liquid crystal element.

- A pulse control section (5, 7, Fig. 2) which controls the applied voltage for driving said liquid crystal element according to the environmental temperature (col. 6, lines 3-19).

15. Hosoyamada further discloses that the temperature detecting section allows the device to achieve optimal control of the drive voltage in accordance with temperature change and thus stabilize optical characteristics with respect to the temperature change (col. 5, lines 36-44)

16. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device taught by Kubota et al. using the temperature detecting device taught by Hosomayada in order to achieve optimal control of the drive voltage in accordance with temperature change and thus stabilize optical characteristics with respect to the temperature change.

17. Regarding claim 5, Hosomayada further teaches the applied voltage is an AC pulse voltage (col. 4, lines 65-66).

18. Regarding claim 6, the combination of Kubota et al. and Hosomayada teaches a driving method of a light control device having a liquid crystal element in which liquid crystal is sealed between opposed substrates, said liquid crystal being a polymer network liquid crystal, a gap between the opposed substrates in an effective optical path being 4-11 microns (see Kubota et al. in re claim 1); wherein said driving method comprising: controlling an applied voltage for driving said liquid crystal element, according to the environmental temperature of said liquid crystal element (Hosomayada col. 6, lines 3-19).

19. Regarding claim 7, Hosomayada teaches the driving method of a light control device according to claim 6, wherein a temperature detecting section which detects the environmental

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temperature of said liquid crystal element is provided and said applied voltage is controlled according to the environmental temperature detected by said temperature detecting section Hosomayada col. 6, lines 3-19).

20. Regarding claim 8, Hosomayada teaches the applied voltage is an AC pulse voltage (col. 4, lines 65-66).

21. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kubota et al. (U.S. Patent No. 6,128,056) as applied to claims 1-3 and the combination of Kubota et al. and Hosoyamada (U.S. Patent No. 6,414,740) as applied to claims 4-5 above, and further in view of Yanagida et al. (U.S. Pub. No. 2002/0097369).

22. Regarding claim 9, neither Kubota et al. nor Hosomayada teach a light control device disposed in an optical path of an image pickup system.

23. However, Yanagida et al. discloses a light control device (23, Fig. 12) disposed in an optical path of an image pickup system.

24. Kubota et al. teaches that an advantage of the polymer dispersed liquid crystal (including polymer network liquid crystal) is that it requires no polarizers to produce linearly polarized light and thus has a high light availability efficiency (Kubota et al., col. 1, lines 16-22).

25. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the image pickup apparatus taught by Yanagida et al. using the polymer network liquid crystal taught by Kubota et al. in order to eliminate the need for a polarizer and thus achieve high light availability efficiency.

### ***Conclusion***

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew Tynan whose telephone number is 571-270-1433. The examiner can normally be reached on Mon-Fri. 7:30-4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on 571-272-4491. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

*Matthew Tynan* 2/27/07

*Andrew Schechter*  
ANDREW SCHECHTER  
PRIMARY EXAMINER